

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) A method for analyzing a data storage apparatus containing a transducer head positionable adjacent a data storage media surface, the method comprising steps of:

- (a) detecting a defective region of the surface; and
- (b) imaging a characteristic size of the defective region assigning a category for the defective region by combining a plurality of readback signals each received during a respective pass of the transducer head adjacent the defective region.

2. (currently amended) The method of claim 1 ~~in which the assigning step (b)~~ includes a preliminary step (b1) of defining a profile for each of at least 3 categories defining a set that includes the category assigned for the defective region comprising:

- (c) categorizing the defective region by comparing the characteristic size of the defective region to a plurality of predefined category profiles.

3. (cancelled)

4. (currently amended) The method of claim 1 ~~in which the category has an identifier indicating whether the defective region is likely to contain 2 wherein the~~ categorizing step comprises identifying the defective region as likely being characteristic of a scratch.

5. (currently amended) The method of claim 1 in which the ~~deriving~~
~~characterizing step (b)~~ further includes a step (b1) of comprises indicating that the
defective region is unreliable if a ~~substantial portion of the defective region has a near-~~
~~zero field ratio~~ defined by a size of a portion of the defective region with a less-than-
expected readback signal strength, and otherwise not generally indicating that the
~~defective region is unreliable~~ compared to a total size of the defective region is greater
than a preselected threshold.

6. - 7. (cancelled)

8. (currently amended) The method of claim 6 ~~in which step (b4) is performed~~
~~so that the image is a useful topographical image 1 wherein the imaging step comprises~~
~~representing an array of data points each having independent coordinates X, and Y and~~
~~Z, in which each combination of X and Y maps to a corresponding unique location~~
~~locations on the data storage media surface and to a corresponding Z derived from a~~
~~readback signal received while the transducer head was adjacent the corresponding~~
~~unique location on the data storage media surface.~~

9. (currently amended) The method of claim 1 ~~in which the deriving step (b)~~
~~further includes steps of:~~

(b1) ~~deriving an estimate of how much of the defective region is characterized~~
~~by a less than nominal, intermediate field strength; and~~

(b2) ~~indicating that the defective region is unreliable if the estimate is lower~~
~~than a predetermined threshold, and otherwise not generally indicating that~~
~~the defective region is unreliable~~ 8 wherein the imaging step comprises

representing an array of data points wherein each X and Y coordinate is associated with a corresponding Z coordinate relating to a strength of the readback signal.

10. (currently amended) The method of claim 1 ~~in which the category includes an indication of whether the defective region is likely to contain 2~~ wherein the categorizing step comprises identifying the defective region as likely being characteristic of corrosion.

11. (currently amended) The method of claim 10 ~~1~~, further ~~including step of~~ comprising:

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- (c) modifying a list of bad sectors in a manner that depends upon the ~~indication~~ imaging step; and
 - (d) retaining the modified list in the data storage apparatus.

12. (original) A data storage apparatus containing a list of bad sectors that is modified according to the method of claim 11.

13. (currently amended) The method of claim 1 ~~2~~, further ~~including steps of~~ comprising:

- (~~e~~ d) assigning a value to each of the defective regions ~~for which the category is assigned according to the categorizing step~~; and
- (~~d~~ e) reworking the data storage apparatus if an aggregation of the assigned values exceeds a predetermined threshold, ~~and otherwise generally marking the data storage apparatus as acceptable.~~

14. (cancelled)

15. (currently amended) The method of claim 13 in which the conditional reworking step (d e) further ~~includes steps of~~ comprises:

(d1 e1) also performing the steps (a) ~~and (b)~~ (a)-(c) upon a multiplicity of other data storage devices;

(d2 e2) identifying a recurring category common to a subset of the multiplicity of data storage devices;

(d3 e3) disassembling a minority of the subset of the data storage devices; and

(d4 e4) deriving the predetermined threshold based upon a ~~visual~~ analysis of the disassembled data storage device(s).

16. (cancelled)

17. (currently amended) The method of claim 1 in which the ~~assigning~~ imaging step (b) ~~includes a step (b1) of~~ comprises receiving all of the plurality of ~~read~~ readback signals from the transducer head while the data storage apparatus is sealed ~~with a top cover~~.

18. – 24. (cancelled)

25. (original) A data storage apparatus comprising:

a media surface containing a defective region;

a transducer head positionable adjacent the surface; and

means for assigning a category for the defective region by combining a plurality of readback signals each received during a respective pass of the transducer head adjacent the defective region.

26. (currently amended) The apparatus of claim 25 in which the ~~assigning step~~ ~~(b) includes a preliminary step (b1) of~~ means for assigning comprises defining a profile for each of at least 3 categories defining a set that includes the category assigned for the defective region.

ay 27. (currently amended) The apparatus of claim 25 in which the ~~assigning step~~ ~~(b)~~ means for assigning is completed while the combination of readback signals has been compared against at most 30 profiles each corresponding to a respective category, the assigned category being one of the respective categories.

28. (currently amended) The apparatus of claim 25 in which the means for assigning comprises a category ~~has an~~ identifier indicating whether the defective region is likely to contain a scratch.

29. (currently amended) The apparatus of claim 25 in which the ~~assigning~~ ~~means for assigning includes~~ comprises means for generating a topographical image of the defective region of the media surface.

30. (currently amended) The apparatus of claim 25 in which the ~~assigning~~ ~~means for assigning~~ is configured to receive all of the plurality of read signals from the

transducer head while the media storage and transducer head are is sealed in a substantially opaque chamber.

31. (new) The method of claim 4 wherein the categorizing step identifies the defective region as likely being characteristic of a scratch if the characteristic size comprises a length that is greater than a width by a factor of about 2.5.

32. (new) A media defect analysis apparatus comprising:
a read/write head adapted for writing data to and reading data from the media;
and
a controller coupled to the read/write head categorizing a defective region of the media by combining a plurality of readback signals each received during a respective pass of the read/write head adjacent the defective region and imaging a characteristic size of the defective region.

33. (new) The apparatus of claim 32 comprising a memory storing a plurality of predefined profiles associated with likely types of defects associated with respective characteristic sizes of the defective region.

34. (new) The apparatus of claim 33 wherein the predefined profiles comprises a characteristic size associated with the defective region likely being characteristic of a scratch.

35. (new) The apparatus of claim 34 wherein the characteristic size comprises a length that is greater than a width by a factor of about 2.5.

36. (new) The apparatus of claim 33 wherein the predefined profiles comprises a characteristic size associated with the defective region likely being unreliable for data storage.

37. (new) The apparatus of claim 36 wherein the characteristic size comprises a ratio defined by a size of a portion of the defective region with a less-than-expected readback signal strength compared to a total size of the defective region being greater than a preselected threshold.

38. (new) The apparatus of claim 32 wherein the controller images an array of data points each having independent coordinates X and Y corresponding to unique locations on the data storage media.

39. (new) The apparatus of claim 38 wherein the controller images an array of data points wherein each X and Y coordinate is associated with a corresponding Z coordinate relating to a strength of the readback signal.

40. (new) The apparatus of claim 33 wherein the predefined profiles comprises a characteristic size associated with the defective region likely being characteristic of corrosion.

41. (new) The apparatus of claim 32 further comprising a memory storing a location of the defective region.

42. (new) The apparatus of claim 32 comprising a data storage device.
